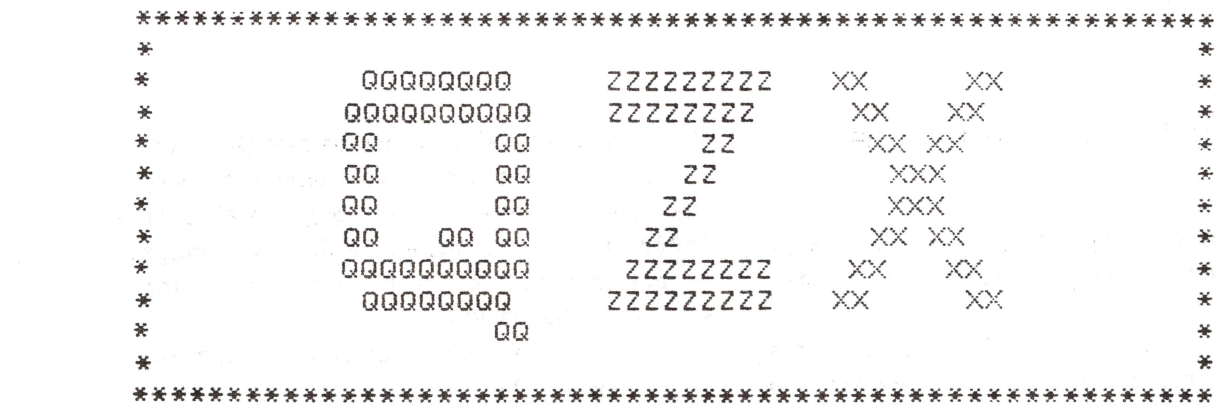
QQQQQQQQ ZZZZZZZZZ XX XX
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The Journal Covering Amateur Radio & Sinclair Computers
ZX80; Micro-Ace; ZX81; TS1000, 1500, & 2068; QL; Z88

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EDITOR'S NOTES

K5XY

I noticed that a Sinclair column was back in the latest issue of the Computer Monthly.

As you can see, I am back from Mexico. I did not see anything related to Sinclair computers while I was there, but I did see lots of computer related things. I even saw 3 1/2" disks for sale by the street vendors which you see in many places in countries like Mexico. I cannot imagine that there would be that much of a market for disks sold in that manner, but then I am astonished at many of the items which street vendors find profitable to sell. I was told that the street price (a real street price) was about 10% less than the price that was asked in stores.

I was in Mexico to open a course in Nuclear Electronics for the International Atomic Energy Agency. The course was held in Toluca, a city of two million west of Mexico City. Eighteen engineers from 16 different countries came to this course. On the first Saturday the organizers took us all into Mexico City to see the electronic parts markets. That was quite an experience. The market is a string of small electronics stores located along El Salvador Avenue. For about four blocks on both sides of the street there are nothing but shops selling components and electronic equipment. The components ranges from old circuit boards to the latest Leader oscilloscopes and included some that you just do not see in the United States. These included speaker parts. I do not mean speakers and drivers to be put in cabinets but the smallest items that go to make up speakers such as voice coils wound on little paper cylinders and even the little felt circles which are glued over the end of the coils. Many stores carried high fi studio audio mixers, big mixers with twelve of more channels, expensive mixers costing well over $1000 US. It seemed like I saw enough mixers in stock to equip all the recording studios in the world.

I saw very little amateur equipment, only a few 2 meter beams.

I saw very little computing equipment either. I was told that the stores which sold personal computers were located in another district. There you could buy IBM, NEC, HP, and other brands. Nobody mentioned Sinclairs. I did see on television an ad for a computer that looked a bit like the TS2068 but it was really quite different. It had a built in slot for you to insert a standard audio cassette for mass storage purposes.

There was one participant in the course from Iran, so I asked him if he could tell me why QZX recently received a number of inquiries from that country. He could offer no reasons.

However on my return home there was another letter to QZX from Iran. That letter said that the address of QZX had recently appeared in a popular magazine, written in the Persian language, called "Computer". The writer, Kamran Karimi, said that thousands of Sinclair computers, especially the ZX81 and QL models, have been sold in Iran. These computers are mostly used by beginners because they are cheap. The more advanced users have IBM or Amiga machines. He said that the inquiries came mostly from University students because only university students have access to foreign currency at reasonable rates.

The postage rate increase is official. The first class rates increased by 16%. I am rushing this issue a bit to get it in the mail before the postage increase takes effect. More on this next month.

UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, blanks, etc.). Payment must be included with order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

WANTED: Any information on TUTOR 16 bit Graphic Computer made by Tomy. Edward L. Radtke, 1602 Woodluck Ave., Louisville, Kentucky, 40205, 502-458-7324.

WANTED: VOTEM analog interface for Timex/Sinclair of schematic. Edward L. Radtke, 1602 Woodluck Ave., Louisville, Kentucky, 40205, 502-458-7324.

WANTED: Any information or user Manual for a Phillips Minicom 1001 word processor. Edward L. Radtke, 1602 Woodluck Ave., Louisville, Kentucky, 40205, 502-458-7324.

TS2068 BUGS

The following pages contain a partial list of the bugs that have been found in the operating system of the TS2068. In some cases a method of correcting for the bug is given also. These pages are patterned after similar pages from the TS2068 technical manual. This article is the first of several on this subject. The other articles will follow in the coming months.

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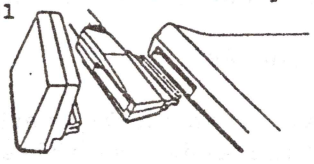

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6.0 Known "BUGS" and Corrections

This section describes the known problems in the TS 2068 System Software and gives corrections or work-arounds where these have been defined.

6.1 LROS and Autostart Machine Code AROS

6.1.1 If you will be using the System ROM Keyboard routines and accessing the input character code from system variable LAST_K (5C08H), you must initialize the TS 2068 to "L" mode by setting the system variable MODE at 23617(5C41H) to zero and setting Bit 3 of FLAGS (23611 -5C3BH) to 1. (The TS 2068 is in "K" mode when control is passed from System Initialization to the Cartridge; Keyword Token codes will be placed in LAST_K instead of character codes.)

6.1.2 If you will be using the System ROM Calculator routines (RESTART 40 (28H)) or any ROM routines that invoke them, you must initialize the System Variable MEM by doing the following:

```
LD    HL,5C92H          Set HL=MEMBOT
LD    (5C68H),HL        Initialize MEM
```

6.1.3 Chunk 3 must not be designated as "in use" by the Cartridge Memory Selection Specification byte. This will cause deselection of the bank switching code prior to completion of the transfer of control to the cartridge starting address. Once control has been transferred, the cartridge code may then enable Chunk 3 in the Dock Bank if desired. (See Section 5.1.)

6.1.4 No entry is made in the System Configuration Table for an AROS if an LROS is present. This means that an LROS designed to support either RAM based or cartridge based applications must include code for detection of an AROS.

6.2 Machine Code AROS

When setting the AROS Overhead parameter requesting RAM space for machine code variables, 21 + n bytes (15H + n) must be requested where n is the number of bytes needed. The machine language variables area then starts at 6855H immediately following the 21-byte CHANS area. (See Section 5.1.2.3.) NOTE: This does not apply to an AROS that contains both BASIC and machine code.

6.3 BASIC AROS

6.3.1 USR Function - When testing the USR address against the Cartridge Memory Selection byte to determine if the address is in the Home Bank or the Dock Bank, the wrong nibble is tested in the register thus a valid cartridge address could be erroneously processed as a Home Bank address. Since the ROM code cannot be corrected, the machine code in the cartridge would have to be moved to an address that does not cause a problem.

6.3.2 FOR/NEXT - If the limit of the FOR statement has already been passed on its initial execution, (e.g. FOR A=1 TO 10 and A has been set to 12), control is passed to the statement following the corresponding NEXT. In the AROS support code, the address of this statement is lost giving unpredictable results. Since the ROM code cannot be corrected, care must be taken not to use this technique in an AROS Cartridge. Normal usage of FOR/NEXT loops is not affected.

6.3.3 Advanced Video Modes - Because the BASIC AROS support code interfaces directly to the Bank Switching code in Chunk 3 (does not access based on its relocatability), the second display file cannot be open when executing BASIC program from an AROS.

6.4 Video Mode Change Service

6.4.1 Available Memory Test - When the size of memory needed is calculated by adding the size of the second display file (6912 bytes or 1B00H) to the memory now in use (address in System Variable STKEND), the code fails to check for overflow. Thus if the address in STKEND is greater than 58623 (E4FFH), the fact that there is not enough free memory to open the second display file will not be detected and the system will "crash". If your BASIC program and/or variables area are large, you may want to make this test yourself prior to invoking the Video Mode Change Service in order to avoid this problem. The size of memory needed is subsequently tested against the contents of RAMTOP and if there is not sufficient space (value in RAMTOP is less than size needed), you will get Error 4, Out of Memory.

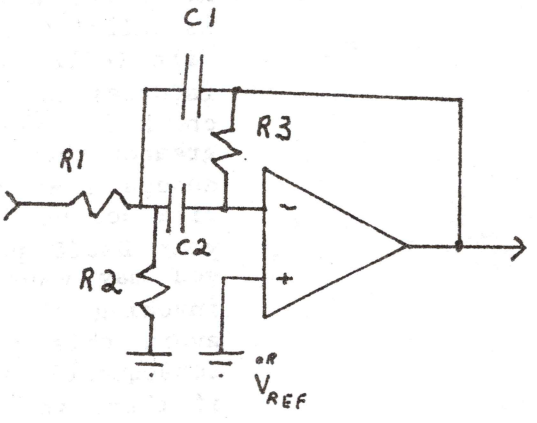
BANDPASS FILTER

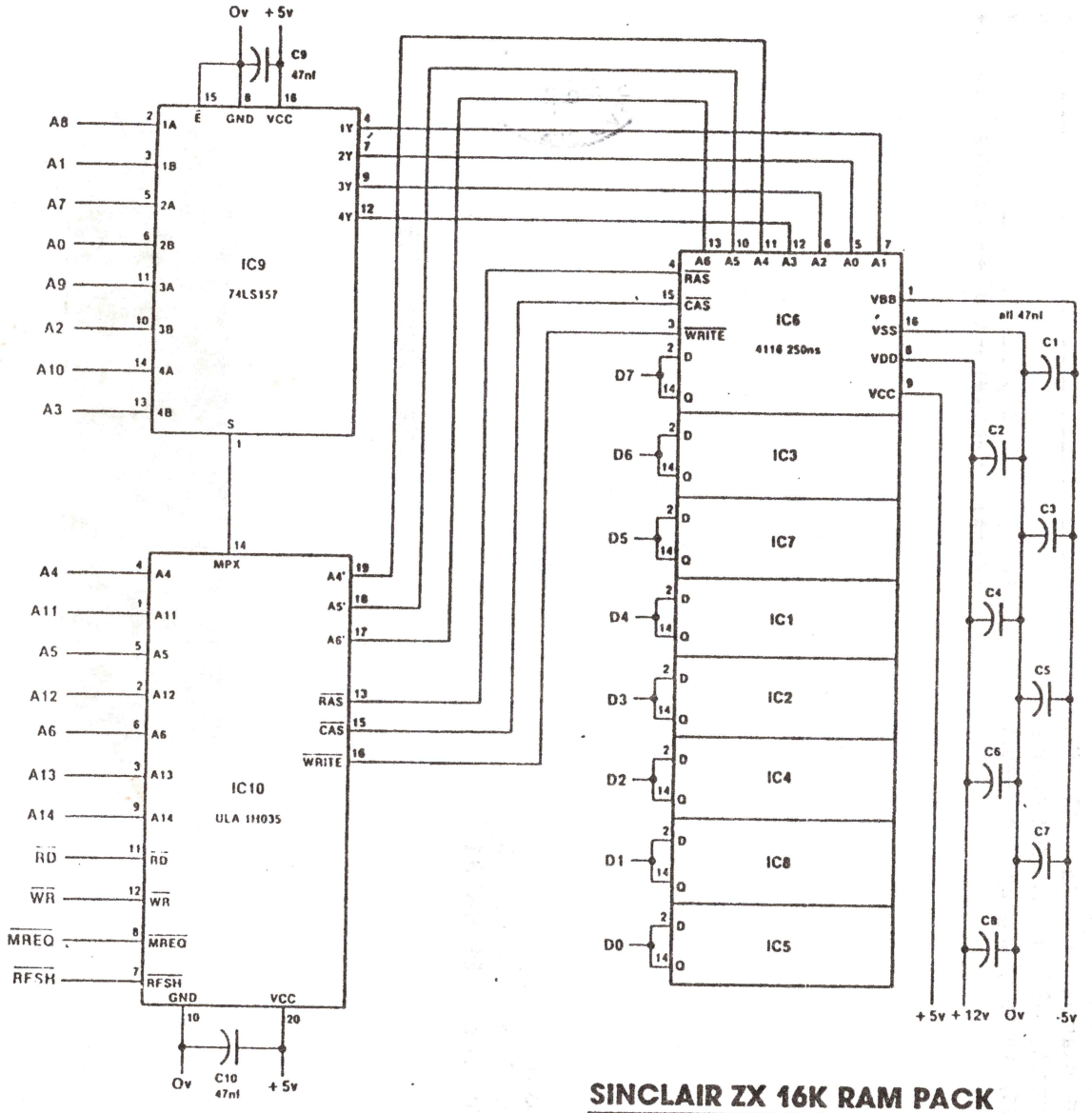
WA3GLW

This program is the third of three which deal with the design of active filters. The three cases will help you design a high pass, a low pass, and a bandpass active filter. In each case there is an operational amplifier in the circuit. Just which one you use is not critical. It is also not critical at what voltage you run the amplifiers. However, if you do not want to change the circuits a bit, you should use a bipolar power supply. Anything between about 9 and 15 volts will do for the usual junk box op amp.

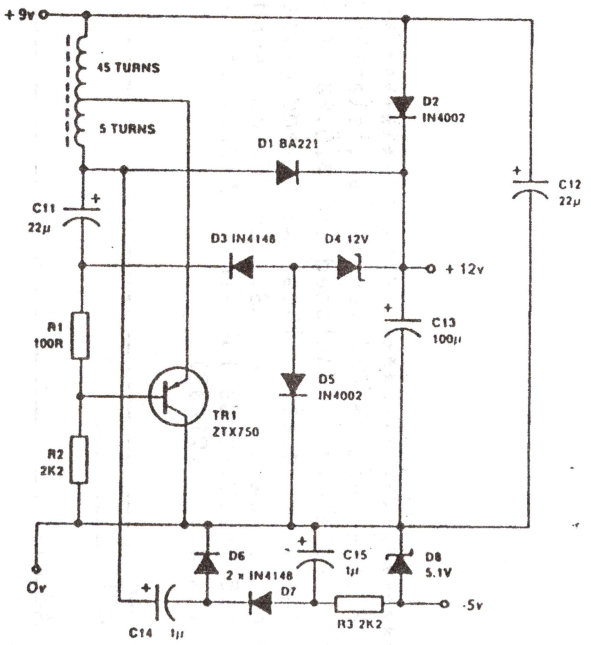
The program will work, but perhaps not quite like you expect it to. There are some difficulties with the lines 200-250. See if you can get them into a form which gives you a result that you like. An article in the last issue gave some ideas on how to modify these last lines.

```
 10 PRINT "BANDPASS ACTIVE FILTER"
 20 PRINT "THE STAGE GAIN SHOULD BE LESS THAN 10"
 30 PRINT "ENTER STAGE GAIN"
 40 INPUT H
 45 PRINT H
 50 PRINT "ENTER THE CENTER FREQ IN HZ"
 60 INPUT F
 65 PRINT F
 67 LET W = 2*PI*F
 70 PRINT "ENTER THE Q"
 90 INPUT Q
 95 PRINT Q
100 PRINT "ENTER THE INPUT CAP (C2) IN UF"
110 INPUT C2
115 PRINT C2
120 LET C2 = C2/1000000
130 PRINT "ENTER FEEDBACK CAP (C1) IN UF
140 INPUT C1
145 PRINT C1
150 LET C1 = C1/1000000
165 LET R1 = Q/(H*W*C1)
170 LET T = R1/(Q*(C1+C2)*W)
180 LET B = R1 - 1/(Q*(C1+C2)*W
190 LET R2 = T/B
200 LET R3 = Q*(C2 + C1)/(C1*C1*W)
210 PRINT "R1 = ";R1;" OHMS"
220 PRINT "R2 = ";R2;" OHMS"
230 PRINT "R3 = ";R3;" OHMS"
240 PRINT "PRESS 1 TO CONTINUE"
250 IF INKEY$ = "" THEN GOTO 250
260 LET A$ = INKEY$
270 IF A$ = "1" THEN CLS
280 GOTO 10
290 IF A$ = "" THEN STOP
9998 SAVE "BANd"
9999 GOTO 10
```

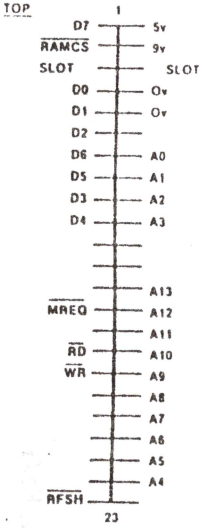




SINCLAIR ZX 16K RAM PACK



EDGE CONNECTOR



73, K5XY

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